

Haystack Creek Culvert  
Spanning the north gulch of Haystack Creek,  
on Going-to-the-Sun Road  
Glacier National Park  
Flathead County  
Montana

HAER No. MT-78

HAER  
MONT,  
15-WEGLA,  
7-

PHOTOGRAPHS  
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
Department of the Interior  
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

HAYSTACK CREEK CULVERT  
HAER MT-78

HAER  
MONT,  
15-WEGLA,  
7-

Location: Spanning the North Gulch of Haystack Creek, on Going-to-the-Sun Road, approximately twenty-six miles northeast of the park entrance at West Glacier, Glacier National Park, Montana  
UTM: Logan Pass Quad. 12/298220/5401800

Date of  
Construction: 1926

Structural Type: Reinforced concrete slab culvert with masonry arch facade

Contractor: Williams & Douglas, Tacoma, Washington

Engineer: Bureau of Public Roads

Owner: Glacier National Park

Use: Drainage culvert

Significance: The Haystack Creek Culvert is one of approximately seventeen prominent masonry and concrete structures on Going-to-the-Sun Road in Glacier National Park. The 51-mile stretch of scenic road is significant as a unique engineering accomplishment of the early twentieth century, and as the first product of a 1925 cooperative agreement between the National Park Service and the Bureau of Public Roads. As in other structures on the road, the culvert's designers used a masonry arch facade in an attempt to make it blend into the park scenery.

Project  
Information: Documentation of the Haystack Creek Culvert is part of the Going-to-the-Sun Road Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and Glacier National Park. Researched and written by Kathryn Steen, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.

For measured drawing, see HAER MT-67B, sheet 2.

### Going-to-the-Sun Road

The Haystack Creek Culvert is a reinforced concrete slab culvert with a masonry arch facade that carries the traffic of Going-to-the-Sun Road, a scenic park road that winds through the spectacular mountains and valleys in the middle of Glacier National Park. The 51-mile road, built in sections between 1911 and 1933, and rebuilt during the next two decades, runs east and west through the park. Starting in the west, the road runs from West Glacier, along the 10-mile eastern shore of Lake McDonald and then up McDonald Creek for an additional ten miles. About one mile beyond the junction with Logan Creek, the road begins its ascent to Logan Pass. The road climbs at a 6 percent grade, passes through a tunnel, and turns at a major switchback called "The Loop." Following the contours of the sides of Haystack Butte and Pollock Mountain, the road passes over several bridges, culverts, and retaining walls before reaching Logan Pass. The road descends to the east along the sides of Piegan Mountain and Going-to-the-Sun Mountain before running along the north shore of St. Mary Lake. The road exits the park as it crosses Divide Creek near St. Mary, Montana.<sup>1</sup>

### Significance of the Road

Going-to-the-Sun Road is significant as an outstanding engineering feat of the early twentieth century. In addition, the road was the first product of the interagency cooperative agreement between the National Park Service (NPS) and the Bureau of Public Roads (BPR). The agreement, signed in 1925, allowed the National Park Service to utilize the roadbuilding expertise of the Bureau of Public Roads while still retaining control to protect the landscape.<sup>2</sup>

### Haystack Creek Culvert

In 1925, Glacier National Park signed a \$900,000 contract with the construction firm of D.A. Williams and A.R. Douglas of Tacoma, Washington, to build a twelve-mile section on the Going-to-the-Sun Road. The section ran from 1½ miles west of Logan Creek up to Logan Pass. The contractors worked on the road for four seasons and completed the project in October, 1928. There were several structures along Williams and Douglas' section of road, including the Logan Creek bridge, the West Side tunnel, the Triple Arches, and the Haystack Creek Culvert. Williams and Douglas built the culvert in 1926, making it one of the oldest structures on the road.<sup>3</sup>

At the North Gulch of Haystack Creek, the topography required the contractors to construct a retaining wall to support the full width of the road, as well as the culvert for the creek. Williams and Douglas built several retaining walls to hold the road to the mountainsides. W.G. Peters, the Bureau of Public Roads' resident engineer supervising the Williams and Douglas contract, estimated that the contractors built 7242 linear feet of retaining wall, containing 8708 cubic yards of material. To insure stability, most of the retaining walls were built with a triangular cross section with the base equalling one-half the height of the wall. Very few of Williams and

Douglas' retaining walls, particularly those on straight sections of road, exceeded eleven feet in height because of the base-to-height ratio.<sup>4</sup> The Haystack Creek Culvert is located on a curve in the road, and the added strength gained in a curve allows the wall to be 16' high at its deepest point.

Williams and Douglas subcontracted out many of the masonry structures on their twelve-mile section. Over the four seasons of construction, the contractor utilized subcontractors in thirty different locations. Haystack Creek Culvert was one of the structures built by the subcontracting station men.<sup>5</sup>

In the BPR-NPS agreement just prior to the Williams and Douglas contract, the NPS officials took particular care to insure the road and its structures would fit into the surrounding environment. The BPR and NPS planners wrote this landscape principle into the specifications of Williams and Douglas' contract. In particular, the specifications required the contractor to use construction materials native to the park.<sup>6</sup> As a result, Williams and Douglas constructed the culvert and other structures to display only the stone found in Glacier National Park. Most of the rock used in the masonry work came from cliff excavation along the road. During the 1930s, subsequent road contractors created two quarries near the culvert. The first was less than 100' west of the culvert and the second was about 800' west of the culvert.<sup>7</sup>

The BPR engineer oversaw the construction of the road and monitored the masonry work. W.C. Peters, the BPR's resident engineer in charge of Williams and Douglas' contract, reported that the subcontractors in the vicinity of Haystack Creek Culvert had completed their work in August 1926, and the contractors graded the section the following month.<sup>8</sup>

#### Description

The Haystack Creek Culvert is a reinforced concrete slab culvert with a masonry facade. The arch is 12' high at its highest point and 16' wide and is part of a retaining wall which is 16' high at its greatest point. The culvert and retaining wall is currently topped by a log guardrail, although the original guardrail was masonry. The retaining wall is located on a curve in the road, where Haystack Creek drops sharply down the mountainside.

ENDNOTES

1. See the Historic American Engineering Record report HAER MT-67 on the Going-to-the-Sun Road.
2. C.H. Purcell, F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel, Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925 (Record Group 79, National Archives, Washington, D.C.).
3. W.G. Peters, "The Transmountain Highway, Glacier National Park," Western Construction News (August 10, 1929), pp. 395, 401; Peters, "Monthly Progress Report--September 1926," (Record Group 79, National Archives).
4. Peters, "The Transmountain Highway," p. 398.
5. Peters, "The Transmountain Highway," p. 398.
6. Purcell, et. al., Suggested Procedure; "Special Features" section of Williams and Douglas' contract (Record Group 79, National Archives).
7. Ernest A. Davidson, "Report to Chief of Division of Landscape Architecture Covering Features of Landscape Interest in Construction of Avalanche-Logan Pass Section of Transmountain Highway, Glacier National Park, 1925 to 1928," April 24, 1929 (Record Group 79, National Archives); A.V. Emery, "Final Construction Report on Glacier National Park Highway Project NR 1-C Retaining Wall and Guard Rail, West Side Transmountain Highway," p. 3 (Glacier National Park Library Historical Files).
8. Peters, "Monthly Progress Report, September 1926," (Record Group 79, National Archives).

BIBLIOGRAPHY

- Davidson, Ernest A. "Report to Chief of Division of Landscape Architecture Covering Features of Landscape Interest in Construction of Avalanche-Logan Pass Section of Transmountain Highway, Glacier National Park, 1925 to 1928." April 24, 1929 (Record Group 79, National Archives, Washington, D.C.)
- Emery, A.V. "Final Construction Report on Glacier National Park Highway Project NR 1-C Retaining Wall and Guard Rail, West Side Transmountain Highway" (Glacier National Park Library Historical Files).
- Historic American Engineering Record. "HAER MT-67: Going-to-the-Sun Road." (Library of Congress, Washington, D.C.)
- Peters, W.G. "Monthly Progress Report--September 1926" (Record Group 79, National Archives, Washington, D.C.)
- Peters, W.G. "The Transmountain Highway, Glacier National Park," Western Construction News (August 10, 1929), pp. 394-401.
- Purcell, C.H., F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel. Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks. April 22, 1925 (Record Group 79, National Archives, Washington, D.C.)
- "Special Features" section of Williams & Douglas' contract (Record Group 79, National Archives, Washington, D.C.)